# *FlyBy Math*™ Alignment
## Mathematics Content Standards and Performance Standards (Grade Level Expectations) [PSGLEs]
## Fourth Edition – March 2006

## Content Standard A: Mathematical Facts, Concepts, Principles, and Theories

### Content Strand: Estimation and Computation

***Estimation:***

| **PSGLE** | ***FlyBy Math*™ Activities** |
|---|---|
| The student determines reasonable answers to real-life situations, paper/pencil computations, or calculator results by<br><br>**[5] E&C-1** identifying or using [a variety of **L**] strategies (e.g., rounding to appropriate place value, multiplying by powers of ten, using front-end estimation to estimate the results of addition or subtraction computations from tenths to 100,000, including money, or simple multiplication or division (M3.2.1) | --Predict outcomes and explain results of mathematical models and experiments. |

### Content Strand: Functions and Relationships

***Describing Patterns and Functions:***

| **PSGLE** | ***FlyBy Math*™ Activities** |
|---|---|
| The student demonstrates conceptual understanding of functions, patterns, or sequences by<br><br>**[5] F&R-1** extending patterns that use addition, subtraction, multiplication, division or symbols, up to 10 terms, represented by models (function machines), tables, sequences, or in problem situations (M4.2.1) | --Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. |
| **[5] F&R-2** using rules to express the generalization of a pattern using words, lists, or tables (M4.2.4) | --Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. |

### Content Strand: Geometry

***Position and Direction:***

| **PSGLE** | ***FlyBy Math*™ Activities** |
|---|---|
| The student demonstrates understanding of position and direction by<br><br>**[5] G-8** locating points of given coordinates on a grid or identifying coordinates for a given point (e.g., items on a treasure map) (L) (M5.2.6) | --Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes. |

| Content Strand: Statistics and Probability | |
|---|---|
| ***Data Display*** | |
| **PSGLE**<br><br>The student demonstrates an ability to classify and organize data by<br><br>**[5] S&P-1** [designing an investigation and collecting L], organizing, or displaying, using appropriate scale, data in real-world problems (e.g., social studies, friends, or school), using bar graphs, tables, charts, diagrams, or line graphs with whole numbers up to 50 (M6.2.1 & M6.2.2) | ***FlyBy Math™* Activities**<br><br>--Conduct simulation and measurement for several aircraft conflict problems.<br><br>--Represent distance, rate, and time data using tables, line plots, bar graphs, and line graphs. |
| ***Analysis and Central Tendency*** | |
| **PSGLE**<br><br>The student demonstrates an ability to analyze data (comparing, explaining, interpreting, evaluating; drawing or justifying conclusions) by<br><br>**[5] S&P-2** using information from a variety of displays (tables, bar graphs, line graphs, or Venn diagrams) (M6.2.2) | ***FlyBy Math™* Activities**<br><br>--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. |

## Content Standards B, C, D, and E: Process Skills and Abilities

| Content Strand: Problem Solving | |
|---|---|
| **PSGLE**<br>The student demonstrates an ability to problem solve by<br><br>**[5] PS-1** selecting and applying an appropriate strategy (e.g., tables, charts, lists, or graphs; guess and check; extended patterns; making a model) to solve a variety of problems and verify the results (M7.2.2) | ***FlyBy Math™* Activities**<br><br>--Conduct simulation and measurement for several aircraft conflict problems.<br><br>--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. |

| Content Strand: Communication | |
|---|---|
| **PSGLE**<br>The student communicates his or her mathematical thinking by<br><br>**[5] PS-3** representing problems using mathematical language including concrete, pictorial, and/or symbolic representation; or organizing and communicating mathematical problem solving strategies and solutions using mathematical language (M8.2.1, M8.2.2, & M8.2.3) | ***FlyBy Math™* Activities**<br><br>--Predict outcomes and explain results of mathematical models and experiments.<br><br>--Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. |

| Content Strand: Reasoning | |
|---|---|
| **PSGLE**<br><br>The student demonstrates an ability to use logic and reason by<br><br>**[5] PS-4** drawing logical conclusions about mathematical situations (given a rule or generalization, determining whether the example fits); or justifying answers and mathematical strategies as reasonable (M9.2.1, M9.2.2, & M9.2.3) | ***FlyBy Math™* Activities**<br><br>--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system. |

| Content Strand: Connections | |
|---|---|
| **PSGLE**<br><br>The student demonstrates the ability to apply mathematical skills and processes across the content strands by<br><br>**[5] PS-5** using real-world contexts such as social studies, friends, and school (M10.2.1 & M10.2.2) | ***FlyBy Math™* Activities**<br><br>--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. |